Lohmann Animal Health International, Inc.
Kennebec County
Winslow, Maine
A-859-71-H-A (SM)

Departmental
Findings of Fact and Order
Air Emission License
Amendment #1

FINDINGS OF FACT

After review of the air emissions license amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes Annotated (M.R.S.A.) §344 and §590, the Maine Department of Environmental Protection (the Department) finds the following facts:

I. REGISTRATION

A. Introduction

Lohmann Animal Health International, Inc. (Lohmann) was issued Air Emission License A-859-71-G-R on February 25, 2013, permitting the operation of emission sources associated with their poultry vaccine development and manufacturing facility. Lohmann has requested an amendment to their license in order to add a new emergency generator and existing solvent use to the license and to document existing insignificant activities. The equipment addressed in this license is located at 375 China Road, Winslow, Maine.

B. Emission Equipment

The following equipment is addressed in this air emission license amendment:

Equipment	Max. Input Capacity (MMBtu/hr)	Rated Output (HP)	Firing Rate (gal/hr)	Fuel Type	Dates of…	Stack #
Generator #4	1.35	155	14.7 *	Propane	Manufacture: 2014 Installation: 12/2014	Generator 4 Stack

* based on a heating value of 91.5 MMBtu per 1000 gal. propane, per AP-42 Section 1.5.

Lohmann uses isopropyl alcohol as a disinfectant at the facility. Because this substance is a volatile organic compound (VOC) and thus a regulated criteria pollutant, emissions from its use are being included in the facility's air emission license.

Lohmann has included in the amendment application a list of heaters, water heaters, and heating boilers, all of which have a heat input capacity below licensing thresholds according to 06-096 CMR 115 and all of which fire propane. Because these units fire propane and all are below 1.6 MMBtu/hour heat input capacity, none are subject to 40 CFR Part 63, Subpart JJJJJJ, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources.* [40 CFR Part 63.11195 (e) and (f)] A list of these units is in the licensing file in the Department's Bureau of Air Quality; they are not addressed further in this amendment.

C. Application Classification

The modification of a minor source is considered either a major or a minor modification based on whether or not expected emission increases exceed the "Significant Emissions" levels as defined in the Department's regulation, 06-096 CMR 100 (as amended). The emission increases are determined by subtracting the current licensed annual emissions preceding the modification from the maximum future licensed annual emissions, as follows:

Pollutant	Current License (TPY)	Future License (TPY)	Net Change (TPY)	Significant Emission Levels
PM	0.7	0.5	-0.2	100
PM_{10}	0.7	0.5	-0.2	100
SO_2	0.03	0.03	0.0	100
NO_x	10.3	3.2	-7.1	100
CO	2.9	1.1	-1.8	100
VOC	0.6	2.4	0.18	50
CO_2e	Less than 100,000	Less than 100,000	n/a	100,000

The emissions decreases shown in the table above are not due to changes at the facility; rather, they are due to adjustment by the Department of the calculations of annual emissions from the three currently licensed emergency generators, the basis of which was changed from 500 hours per year per generator to 100 hours per year per generator, to align with federal regulations and current Department policy.

The addition of Generator #4 and the quantification of VOC emissions from the use of isopropyl alcohol as a disinfectant will increase emissions by less than 4 ton/year for each single pollutant and less than 8 ton/year for all pollutants combined.

This modification is determined to be a minor modification and has been processed as such.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). Separate control requirement categories exist for new and existing equipment. BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 CMR 100 (as amended). BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts.

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering the following:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

B. Emergency Generator #4

Generator #4 is a Kohler model emergency generator certified as conforming with requirements for 2014 model year units according to the Clean Air Act. The unit is rated at 1.35 MMBtu/hour and fires propane. The generator was manufactured in 2014.

1. BACT/BPT Findings

The BACT/BPT emission limits for Generator #4 are based on the following:

Pollutant	Emission Factor, lb/MMBtu	Origin of Emission Factor
PM, PM_{10}	7.71×10^{-5}	AP-42, Table 3.2-2 (7/2000)
SO_2	5.88×10^{-4}	
NO_x	4.08	
CO	0.557	
VOC	0.118	

The BACT/BPT emission limits for Generator #4 are the following:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #4 1.35 MMBtu/hour Propane	negligible			5.49	0.75	0.16

Visible emissions from Generator #4 shall not exceed 10% opacity on a six-minute block average basis, except for no more than two six-minute block averages in a three-hour period. [06-096 CMR 101]

2. New Source Performance Standards (NSPS): 40 CFR Part 60, Subpart JJJJ

The federal regulation 40 CFR Part 60, Subpart JJJJ, *Standards of Performance for Spark Ignition Internal Combustion Engines (SI ICE),* is applicable to the emergency generator listed above since the unit was ordered after June 12, 2006, and manufactured after January 1, 2009. By meeting the requirements of Subpart JJJJ, the unit also meets the requirements found in 40 CFR Part 63, Subpart ZZZZ, *National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.*

a. Emergency Definition

Emergency stationary ICE means any stationary reciprocating internal combustion engine that meets all of the following criteria:

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted; stationary ICE used to pump water in the case of fire or flood; etc. **There is no time limit on the use of emergency stationary ICE in emergency situations.**

(2) Paragraph (1) above notwithstanding, the emergency stationary ICE may be operated for a maximum of 100 hours per calendar year for any combination of the purposes specified below:

(i) Maintenance checks and readiness testing, provided that the tests are recommended by federal, state, or local government; the manufacturer; the vendor; the regional transmission organization or equivalent balancing authority and transmission operator; or the insurance company associated with the unit. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

(ii) Emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, *Capacity and Energy*

Emergencies, or other authorized entity as determined by the Reliability Coordinator has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Periods where there is a deviation of voltage or frequency of five percent or greater below standard voltage or frequency.

(3) Paragraphs (1) and (2) above notwithstanding, emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. These 50 hours are counted as part of the 100 hours per calendar year for maintenance checks and readiness testing, emergency demand response, and periods of voltage deviation or low frequency, as provided in paragraph (2) above.

The 50 hours per calendar year for non-emergency situations cannot be used for peak shaving, non-emergency demand response, or to generate income by providing power to an electric grid or otherwise supplying power as part of a financial arrangement with another entity, unless the following conditions are met:

(i) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(ii) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(iii) The dispatch follows reliability, emergency operation, or similar protocols that follow specific NERC, regional, state, public utility commission, or local standards or guidelines.

(iv) The power is provided only to the facility itself or to support the local transmission and distribution system.

(v) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission, or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[40 CFR §60.4243(d) and §60.4248]

b. 40 CFR Part 60, Subpart JJJJ Requirements

(1) Manufacturer Certification Requirement

The generator shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 CFR Part 60, Subpart JJJJ, Table 1.

(2) Non-Resettable Hour Meter Requirement
A non-resettable hour meter shall be installed and operated on the generator. [40 CFR §60.4237]

(3) Operation and Maintenance Requirement
The generator shall be operated and maintained according to the manufacturer's written instructions or procedures developed by Lohmann that are approved by the engine manufacturer. Lohmann may only change those settings that are permitted by the manufacturer. [40 CFR §60.4243]

(4) Annual Time Limit for Maintenance and Testing
The generator shall be limited to 100 hours/year for maintenance and testing. The emergency unit may operate up to 50 hours per year in non-emergency situations, but those 50 hours are included in the 100 hours allowed for maintenance and testing. The 50 hours for non-emergency use cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR §60.4243(d)]

(5) Recordkeeping
Lohmann shall keep records that include maintenance conducted on Generator #4 and the hours of operation of the unit recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit was operated for emergency purposes, including what classified the operation as emergency, and the number of hours the unit was operated for non-emergency purposes. If Generator #4 is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 CFR §60.4243(d)(3)(i), Lohmann shall keep records of the notification of the emergency situation and the date, start time, and end time of generator operation for these purposes. [40 CFR §60.4245(b)]

(6) Annual Reporting Requirement for Demand Response Availability Over 15 Hours Per Year (for generators greater than 100 brake hp)
If Lohmann operates or is contractually obligated to have Generator #4 available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 CFR §60.4243(d)(3)(i), Lohmann shall submit an annual report containing the information in 40 CFR §60.4245(e)(1)(i) through (vii). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be

submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI), accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

[40 CFR §60.4245(e)]

C. Disinfectant Solvent

Lohmann uses isopropyl alcohol (C_3H_7OH) as a disinfectant for the procedures and activities conducted at the facility. VOC emissions are considered to be 100% of the material used, since none of the emissions are captured or controlled. Based on the facility's current use and allowing a margin for growth, Lohmann shall be limited to no more than 2.2 tons/year of VOC emissions from the use of isopropyl alcohol as a disinfectant (the equivalent of 660 gallons – 12 55-gallon drums – per year of isopropyl alcohol with a density of 6.56 lb/gal).

Compliance with this limit shall be documented through purchasing and inventory records of the quantity of isopropyl alcohol used, on a calendar year basis.

D. Annual Emissions

1. Total Annual Emissions

Annual emissions were calculated based on the following:

- Firing a combined total of 150,000 gallons of LPG/propane per year in the boilers;
- 100 hours of operation of each emergency generator per year;
- Firing 20,000 gallons of LPG/propane fuel per year in Incinerator #3.

Lohmann shall be restricted to the following annual emissions on a calendar year basis:

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM_{10}	SO_2	NO_x	CO	VOC
Boilers #1 and #2	0.36	0.36	0.01	0.96	0.55	0.08
Generator #1	0.04	0.04	--	0.96	0.26	0.03
Generator #2	0.01	0.01	--	0.33	0.07	0.03
Generator #3	0.01	0.01	--	0.53	0.11	0.04
Generator #4	--	--	--	0.28	0.04	0.01
Incinerator #3	0.07	0.07	0.03	0.18	0.11	0.02
Disinfectant	--	--	--	--	--	2.2
Total TPY	**0.5**	**0.5**	**0.04***	**3.2**	**1.1**	**2.4**

* The SO_2 emissions from both boilers are significantly less than 0.01 ton/year each and were rounded up to that value for the two boilers combined. SO_2 emissions from all four generators are negligible.

2. Greenhouse Gases

Greenhouse gases are considered regulated pollutants as of January 2, 2011, through 'Tailoring' revisions made to EPA's *Approval and Promulgation of Implementation Plans,* 40 CFR Part 52, Subpart A, §52.21, *Prevention of Significant Deterioration of Air Quality* rule. Greenhouse gases, as defined in 06-096 CMR 100 (as amended), are the aggregate group of the following gases: carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. For licensing purposes, greenhouse gases (GHG) are calculated and reported as carbon dioxide equivalents (CO_2e).

The quantity of CO_2e emissions from this facility is less than 100,000 tons per year, based on the following:

- the facility's fuel use limits;
- worst case emission factors from the following sources: U.S. EPA's AP-42, the Intergovernmental Panel on Climate Change (IPCC), and 40 CFR Part 98, *Mandatory Greenhouse Gas Reporting*; and
- global warming potentials contained in 40 CFR Part 98.

No additional licensing actions to address GHG emissions are required at this time.

III. AMBIENT AIR QUALITY ANALYSIS

The level of ambient air quality impact modeling required for a modification at a minor source is determined by the Department on a case-by case basis. Per 06-096 CMR 115, an ambient air quality impact analysis is not required for a minor source if the total licensed

annual emissions of any pollutant released do not exceed the following levels and there are no extenuating circumstances:

Pollutant	Tons/Year
PM_{10}	25
SO_2	50
NO_x	50
CO	250

The total licensed annual emissions for the facility are below the emission levels contained in the table above and there are no extenuating circumstances; therefore, an ambient air quality impact analysis is not required as part of this license.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards, and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-859-71-H-A subject to the conditions found in Air Emission License A-859-71-G-R and the conditions listed below.

Severability. The invalidity or unenforceability of any provision of this License or parts thereof shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

Part A of Specific Condition (17) in Air Emission License A-859-71-G-R shall be replaced with the following Part A. The other parts of Specific Condition (17) shall remain in effect as written in Air Emission License A-859-71-G-R unless amended in a future licensing action.

(17) **Emergency Generators #1, #2, and #3**

A. Each of the emergency generators shall be limited to 100 hours of operation per calendar year, excluding the hours operated during emergency situations. [06-096 CMR 115]

The following Specific Conditions shall be in addition to those conditions contained in Air Emission License A-859-71-G-R.

(20) **Emergency Generator #4**

A. Generator #4 shall be limited to 100 hours of operation per calendar year, excluding operating hours during emergency situations. [06-096 CMR 115]

B. Emissions from Generator #4 shall not exceed the following:

Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #4 1.35 MMBtu/hour Propane	negligible			5.49	0.75	0.16

C. Visible Emissions

Visible emissions from Generator #4 shall not exceed 10% opacity on a six-minute block average basis, except for no more than two six-minute block averages in a three-hour period. [06-096 CMR 101]

D. Generator #4 shall meet the applicable requirements of 40 CFR Part 60, Subpart JJJJ, including the following:

1. Manufacturer Certification
The generator shall be certified by the manufacturer as meeting the emission standards for new nonroad spark ignition engines found in 40 CFR Part 60, Subpart JJJJ, Table 1.

2. Non-Resettable Hour Meter
A non-resettable hour meter shall be installed and operated on Generator #4. [40 CFR §60.4237 and 06-096 CMR 115, BPT]

3. Operation and Maintenance
The generator shall be operated and maintained according to the manufacturer's written instructions or procedures developed by Lohmann that are approved by the engine manufacturer. Lohmann may only change those settings that are permitted by the manufacturer. [40 CFR §60.4243]

4. Annual Time Limit for Maintenance and Testing
Generator #4 shall be limited to 100 hours/year for maintenance and testing. The emergency unit may operate up to 50 hours per year in non-emergency situations, but those 50 hours are included in the 100 hours allowed for maintenance and testing. The 50 hours for non-emergency use cannot be used for peak shaving or

to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR §60.4243(d) and 06-096 CMR 115, BPT]

5. Recordkeeping
Lohmann shall keep records that include maintenance conducted on Generator #4 and the hours of operation of the unit recorded through the non-resettable hour meter. Documentation shall include the number of hours the unit was operated for emergency purposes, including what classified the operation as emergency, and the number of hours the unit was operated for non-emergency purposes. If Generator #4 is operated during a period of demand response or deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 CFR §60.4243(d)(3)(i), Lohmann shall keep records of the notification of the emergency situation and the date, start time, and end time of generator operation for these purposes. [40 CFR §60.4245(b)]

6. Annual Reporting Requirement for Demand Response Availability Over 15 Hours Per Year (for generators greater than 100 brake hp)
If Lohmann operates or is contractually obligated to have Generator #4 available for more than 15 hours per calendar year in a demand response program, during a period of deviation from standard voltage or frequency, or to supply power during a non-emergency situation as part of a financial arrangement with another entity as specified in 40 CFR §60.4243(d)(3)(i), Lohmann shall submit an annual report containing the information in 40 CFR §60.4245(e)(1)(i) through (vii). The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent reports for each calendar year must be submitted no later than March 31 of the following calendar year. The annual report must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI), accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form is not available in CEDRI at the time that the report is due, the written report must be submitted to the following address:

Director, Office of Ecosystem Protection
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

[40 CFR §60.4245(e)]

(21) Disinfectant

Lohmann shall be limited to no more than 2.2 tons/year of VOC emissions from the use of isopropyl alcohol as a disinfectant (the equivalent of 660 gallons – 12 55-gallon drums – per year of isopropyl alcohol).

Compliance with this limit shall be documented through purchasing and inventory records of the quantity of isopropyl alcohol used, on a calendar year basis.

DONE AND DATED IN AUGUSTA, MAINE THIS 31 DAY OF December , 2014.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: Marc Allen Robert Cone for
PATRICIA W. AHO, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-859-71-G-R.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: December 10, 2014
Date of application acceptance: December 11, 2014

Date filed with the Board of Environmental Protection:

This Order prepared by Jane E. Gilbert, Bureau of Air Quality.

Filed
JAN 05 2015
State of Maine
Board of Environmental Protection